

C. Kaitman

1600 #8
8/21/2001

Serial Number: 09/457,864

ENTERED

CRF Processing Date:

Edited by:

Verified by:

(STIC star)

☐

Changed a file from non-ASCII to ASCII

☐

Changed the margins in cases where the sequence text was "wrapped" down to the next line.

☐

Edited a format error in the Current Application Data section, specifically:

☐

Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other

☐

Added the mandatory heading and subheadings for "Current Application Data".

☐

Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

☐

Changed the spelling of a mandatory field (the headings or subheadings), specifically:

☐

Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

☐

Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

☐

Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

☐

Inserted colons after headings/subheadings. Headings edited included:

☐

Deleted extra, invalid, headings used by an applicant, specifically:

☒

Deleted: ☒ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/lastname at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as

☐

Inserted mandatory headings, specifically:

☐

Corrected an obvious error in the response, specifically:

☐

Edited identifiers where upper case is used but lower case is required, or vice versa.

☐

Corrected an error in the Number of Sequences field, specifically:

☐

A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

☐

Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected:

☐

Other:

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/457,864

DATE: 08/21/2001

TIME: 15:16:08

Input Set : N:\jumbos\457864.txt

Output Set: N:\CRF3\08212001\I457864.raw

```

4 <110> APPLICANT: Pioneer HiBred International
5      Bulla, Lee A.
7 <120> TITLE OF INVENTION: RECEPTOR FOR A BACILLUS THURINGIENSIS
8      TOXIN
10 <130> FILE REFERENCE: 27112-20037.13
12 <140> CURRENT APPLICATION NUMBER: 09/457,864
13 <141> CURRENT FILING DATE: 1999-12-10
15 <150> PRIOR APPLICATION NUMBER: US 08/326,117
16 <151> PRIOR FILING DATE: 1994-10-19
18 <160> NUMBER OF SEQ ID NOS: 15
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 5582
24 <212> TYPE: DNA
25 <213> ORGANISM: M. sexta
27 <220> FEATURE:
28 <221> NAME/KEY: CDS
29 <222> LOCATION: (197)...(5348)
31 <400> SEQUENCE: 1
32 gaccaatcgg agtgtggtga atttttggaa aatattttgt gcggttcctt tagttgtgta      60
33 atatagtact ttagttacaa atttggaata atttggcagc aaaaccatct gcagcaacaa      120
34 aatcatctgc agctgcgaaa tcatctgcag cagcaaaagc atcttcagga gcgagaaaag      180
35 ccccaaataa tgtgag atg gca gtt gac gtc cga atc gct gcc ttc ctg ctg      232
36      Met Ala Val Asp Val Arg Ile Ala Ala Phe Leu Leu
37      1          5          10
39 gtg ttt ata gcg cct gca gtt tta gct caa gag aga tgt ggg tat atg      280
40 Val Phe Ile Ala Pro Ala Val Leu Ala Gln Glu Arg Cys Gly Tyr Met
41      15          20          25
43 acc gcc atc cca agg cta cca cga ccg gat aat ttg cca gta cta aat      328
44 Thr Ala Ile Pro Arg Leu Pro Arg Pro Asp Asn Leu Pro Val Leu Asn
45      30          35          40
47 ttt gaa ggc cag aca tgg agt cag agg ccc ctg ctc ccc gcc ccg gag      376
48 Phe Glu Gly Gln Thr Trp Ser Gln Arg Pro Leu Leu Pro Ala Pro Glu
49 45          50          55          60
51 cgg gat gac ctg tgc atg gac gcc tac cac gtg ata aca gcc aac ctc      424
52 Arg Asp Asp Leu Cys Met Asp Ala Tyr His Val Ile Thr Ala Asn Leu
53      65          70          75
55 ggc acg cag gtc atc tac atg gat gaa gag ata gaa gac gaa atc acc      472
56 Gly Thr Gln Val Ile Tyr Met Asp Glu Glu Ile Glu Asp Glu Ile Thr
57      80          85          90
59 atc gcc ata ctt aat tat aac gga cca tca act ccg ttc att gaa ctg      520
60 Ile Ala Ile Leu Asn Tyr Asn Gly Pro Ser Thr Pro Phe Ile Glu Leu
61      95          100          105
63 cca ttt tta tcc ggt tcg tac aat ctg ctg atg ccg gtc atc agg aga      568
64 Pro Phe Leu Ser Gly Ser Tyr Asn Leu Leu Met Pro Val Ile Arg Arg
65      110          115          120
67 gtt gac aac ggg gag tgg cat ctc atc atc acg caa aga cag cat tac      616

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Input Set : N:\jumbos\457864.txt

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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 68 | Val | Asp | Asn | Gly | Glu | Trp | His | Leu | Ile | Ile | Thr | Gln | Arg | Gln | His | Tyr | |
| 69 | 125 | | | | | 130 | | | | | 135 | | | | | 140 | |
| 71 | gag | ttg | ccc | ggc | atg | cag | cag | tac | atg | ttc | aat | gtg | cgc | gtg | gac | ggc | 664 |
| 72 | Glu | Leu | Pro | Gly | Met | Gln | Gln | Tyr | Met | Phe | Asn | Val | Arg | Val | Asp | Gly | |
| 73 | | | | 145 | | | | | | 150 | | | | | 155 | | |
| 75 | cag | tcg | ctg | gtg | gca | ggc | gtg | tct | ctc | gct | atc | gtc | aac | ata | gat | gac | 712 |
| 76 | Gln | Ser | Leu | Val | Ala | Gly | Val | Ser | Leu | Ala | Ile | Val | Asn | Ile | Asp | Asp | |
| 77 | | | | 160 | | | | | 165 | | | | | 170 | | | |
| 79 | aac | gcg | ccc | atc | ata | caa | aac | ttc | gag | cct | tgc | cgg | gtt | cct | gaa | ctg | 760 |
| 80 | Asn | Ala | Pro | Ile | Ile | Gln | Asn | Phe | Glu | Pro | Cys | Arg | Val | Pro | Glu | Leu | |
| 81 | | | 175 | | | | | 180 | | | | | 185 | | | | |
| 83 | ggc | gag | cca | ggg | ttg | aca | gaa | tgc | aca | tac | caa | gta | tcg | gac | gcg | gac | 808 |
| 84 | Gly | Glu | Pro | Gly | Leu | Thr | Glu | Cys | Thr | Tyr | Gln | Val | Ser | Asp | Ala | Asp | |
| 85 | | 190 | | | | | 195 | | | | 200 | | | | | | |
| 87 | gga | cgg | atc | agc | aca | gag | ttc | atg | acg | ttc | agg | atc | gac | agc | gtt | cgt | 856 |
| 88 | Gly | Arg | Ile | Ser | Thr | Glu | Phe | Met | Thr | Phe | Arg | Ile | Asp | Ser | Val | Arg | |
| 89 | 205 | | | | | 210 | | | | | 215 | | | | | 220 | |
| 91 | ggc | gac | gag | gag | acc | ttc | tac | atc | gaa | cgg | acg | aat | atc | ccc | aac | caa | 904 |
| 92 | Gly | Asp | Glu | Glu | Thr | Phe | Tyr | Ile | Glu | Arg | Thr | Asn | Ile | Pro | Asn | Gln | |
| 93 | | | | 225 | | | | | | 230 | | | | 235 | | | |
| 95 | tgg | atg | tgg | cta | aat | atg | acc | ata | ggc | gtt | aat | acc | tcg | ctc | aac | ttc | 952 |
| 96 | Trp | Met | Trp | Leu | Asn | Met | Thr | Ile | Gly | Val | Asn | Thr | Ser | Leu | Asn | Phe | |
| 97 | | | 240 | | | | | | 245 | | | | | 250 | | | |
| 99 | gtc | acc | agt | ccg | ctg | cat | ata | ttc | agc | gtg | aca | gcc | ctg | gac | tcg | ctc | 1000 |
| 100 | Val | Thr | Ser | Pro | Leu | His | Ile | Phe | Ser | Val | Thr | Ala | Leu | Asp | Ser | Leu | |
| 101 | | | 255 | | | | | 260 | | | | | 265 | | | | |
| 103 | ccg | aac | acc | cac | acg | gtg | act | atg | atg | gtg | caa | gtg | gcg | aat | gtg | aac | 1048 |
| 104 | Pro | Asn | Thr | His | Thr | Val | Thr | Met | Met | Val | Gln | Val | Ala | Asn | Val | Asn | |
| 105 | | 270 | | | | | 275 | | | | | 280 | | | | | |
| 107 | agc | cgt | ccg | ccg | cgc | tgg | ctg | gag | atc | ttc | gct | gtc | caa | cag | ttt | gaa | 1096 |
| 108 | Ser | Arg | Pro | Pro | Arg | Trp | Leu | Glu | Ile | Phe | Ala | Val | Gln | Gln | Phe | Glu | |
| 109 | 285 | | | | | 290 | | | | | 295 | | | | | 300 | |
| 111 | gag | aaa | tct | tac | caa | aac | ttc | aca | gtg | agg | gcg | atc | gac | gga | gac | act | 1144 |
| 112 | Glu | Lys | Ser | Tyr | Gln | Asn | Phe | Thr | Val | Arg | Ala | Ile | Asp | Gly | Asp | Thr | |
| 113 | | | | 305 | | | | | | 310 | | | | 315 | | | |
| 115 | gag | atc | aat | atg | cct | atc | aac | tac | agg | ctg | atc | aca | aat | gag | gaa | gac | 1192 |
| 116 | Glu | Ile | Asn | Met | Pro | Ile | Asn | Tyr | Arg | Leu | Ile | Thr | Asn | Glu | Glu | Asp | |
| 117 | | | | 320 | | | | | 325 | | | | | 330 | | | |
| 119 | aca | ttc | ttc | agc | att | gag | gcc | ctg | cct | ggt | gga | aaa | agc | ggg | gct | gta | 1240 |
| 120 | Thr | Phe | Phe | Ser | Ile | Glu | Ala | Leu | Pro | Gly | Gly | Lys | Ser | Gly | Ala | Val | |
| 121 | | | 335 | | | | | 340 | | | | | | 345 | | | |
| 123 | ttc | ctc | gtg | tcg | cca | att | gac | cgc | gac | aca | ctg | caa | cga | gag | gtg | ttt | 1288 |
| 124 | Phe | Leu | Val | Ser | Pro | Ile | Asp | Arg | Asp | Thr | Leu | Gln | Arg | Glu | Val | Phe | |
| 125 | | 350 | | | | | 355 | | | | | | 360 | | | | |
| 127 | cca | ctt | acg | atc | gtc | gct | tac | aaa | tat | gat | gag | gag | gcc | ttc | tcc | aca | 1336 |
| 128 | Pro | Leu | Thr | Ile | Val | Ala | Tyr | Lys | Tyr | Asp | Glu | Glu | Ala | Phe | Ser | Thr | |
| 129 | 365 | | | | | 370 | | | | | 375 | | | | | 380 | |
| 131 | tca | aca | aac | gtg | gtc | atc | att | gtg | aca | gac | atc | aac | gac | caa | aga | cct | 1384 |
| 132 | Ser | Thr | Asn | Val | Val | Ile | Ile | Val | Thr | Asp | Ile | Asn | Asp | Gln | Arg | Pro | |

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/457,864

DATE: 08/21/2001

TIME: 15:16:08

Input Set : N:\jumbos\457864.txt

Output Set: N:\CRF3\08212001\I457864.raw

| | | | | | | | | |
|-----|---|-----|-----|-----|-----|-----|-----|------|
| 133 | | 385 | | 390 | | 395 | | |
| 135 | gaa cct ata cac aag gaa tat cga ctg gca atc atg gag gag acg ccc | | | | | | | 1432 |
| 136 | Glu Pro Ile His Lys Glu Tyr Arg Leu Ala Ile Met Glu Glu Thr Pro | | | | | | | |
| 137 | | 400 | | 405 | | 410 | | |
| 139 | ctg acc ctc aac ttc gat aaa gaa ttc gga ttt cat gat aag gat tta | | | | | | | 1480 |
| 140 | Leu Thr Leu Asn Phe Asp Lys Glu Phe Gly Phe His Asp Lys Asp Leu | | | | | | | |
| 141 | | 415 | | 420 | | 425 | | |
| 143 | ggt caa aac gct cag tac acg gtg cgt cta gag agc gtg gac cct cca | | | | | | | 1528 |
| 144 | Gly Gln Asn Ala Gln Tyr Thr Val Arg Leu Glu Ser Val Asp Pro Pro | | | | | | | |
| 145 | | 430 | | 435 | | 440 | | |
| 147 | ggc gct gct gag gca ttc tac ata gcg cct gaa gtc ggc tac cag cga | | | | | | | 1576 |
| 148 | Gly Ala Ala Glu Ala Phe Tyr Ile Ala Pro Glu Val Gly Tyr Gln Arg | | | | | | | |
| 149 | 445 | | 450 | | 455 | | 460 | |
| 151 | cag acc ttc atc atg ggc acc ctc aat cac tcc atg ctg gat tac gaa | | | | | | | 1624 |
| 152 | Gln Thr Phe Ile Met Gly Thr Leu Asn His Ser Met Leu Asp Tyr Glu | | | | | | | |
| 153 | | 465 | | 470 | | 475 | | |
| 155 | gtg cca gag ttt cag agt att acg att cgg gtg gta gcg acc gac aac | | | | | | | 1672 |
| 156 | Val Pro Glu Phe Gln Ser Ile Thr Ile Arg Val Val Ala Thr Asp Asn | | | | | | | |
| 157 | | 480 | | 485 | | 490 | | |
| 159 | aac gac acg agg cac gtg ggc gtc gcg ttg gtt cac att gac ctc atc | | | | | | | 1720 |
| 160 | Asn Asp Thr Arg His Val Gly Val Ala Leu Val His Ile Asp Leu Ile | | | | | | | |
| 161 | | 495 | | 500 | | 505 | | |
| 163 | aat tgg aac gat gag cag ccg atc ttc gaa cac gcc gtg cag acc gtc | | | | | | | 1768 |
| 164 | Asn Trp Asn Asp Glu Gln Pro Ile Phe Glu His Ala Val Gln Thr Val | | | | | | | |
| 165 | | 510 | | 515 | | 520 | | |
| 167 | acc ttc gac gag act gaa ggc gag ggg ttc ttc gtc gcc aag gcg gtt | | | | | | | 1816 |
| 168 | Thr Phe Asp Glu Thr Glu Gly Glu Gly Phe Val Ala Lys Ala Val | | | | | | | |
| 169 | 525 | | 530 | | 535 | | 540 | |
| 171 | gca cac gac aga gac atc ggg gat gtc gtc gag cat act tta ttg ggt | | | | | | | 1864 |
| 172 | Ala His Asp Arg Asp Ile Gly Asp Val Val Glu His Thr Leu Leu Gly | | | | | | | |
| 173 | | 545 | | 550 | | 555 | | |
| 175 | aac gct gtt aac ttc ctg acc atc gac aaa ctc acc ggc gac atc cgc | | | | | | | 1912 |
| 176 | Asn Ala Val Asn Phe Leu Thr Ile Asp Lys Leu Thr Gly Asp Ile Arg | | | | | | | |
| 177 | | 560 | | 565 | | 570 | | |
| 179 | gtc tca gct aac gac tcc ttc aac tac cat cga gaa agt gaa tta ttt | | | | | | | 1960 |
| 180 | Val Ser Ala Asn Asp Ser Phe Asn Tyr His Arg Glu Ser Glu Leu Phe | | | | | | | |
| 181 | | 575 | | 580 | | 585 | | |
| 183 | gtg cag gtg cga gct aca gac acg ctg ggc gaa ccc ttc cac acg gcg | | | | | | | 2008 |
| 184 | Val Gln Val Arg Ala Thr Asp Thr Leu Gly Glu Pro Phe His Thr Ala | | | | | | | |
| 185 | | 590 | | 595 | | 600 | | |
| 187 | acg tca cag ctg gtc ata cga cta aat gac atc aac aac acg cca ccc | | | | | | | 2056 |
| 188 | Thr Ser Gln Leu Val Ile Arg Leu Asn Asp Ile Asn Asn Thr Pro Pro | | | | | | | |
| 189 | 605 | | 610 | | 615 | | 620 | |
| 191 | acc tta cgg ctg cct cga ggc agt ccc caa gtg gag gag aac gtg cct | | | | | | | 2104 |
| 192 | Thr Leu Arg Leu Pro Arg Gly Ser Pro Gln Val Glu Glu Asn Val Pro | | | | | | | |
| 193 | | 625 | | 630 | | 635 | | |
| 195 | gat ggc cac gtc atc acc cag gag tta cgc gcc acc gac ccc gac acc | | | | | | | 2152 |
| 196 | Asp Gly His Val Ile Thr Gln Glu Leu Arg Ala Thr Asp Pro Asp Thr | | | | | | | |
| 197 | | 640 | | 645 | | 650 | | |

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Input Set : N:\jumbos\457864.txt

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| | | |
|-----|---|------|
| 199 | acg gcc gat ctg cgc ttc gag ata aac tgg gac acc tct ttc gcc acc | 2200 |
| 200 | Thr Ala Asp Leu Arg Phe Glu Ile Asn Trp Asp Thr Ser Phe Ala Thr | |
| 201 | 655 660 665 | |
| 203 | aag caa ggc cgc cag gct aac ccc gac gag ttt agg aat tgc gtg gaa | 2248 |
| 204 | Lys Gln Gly Arg Gln Ala Asn Pro Asp Glu Phe Arg Asn Cys Val Glu | |
| 205 | 670 675 680 | |
| 207 | atc gag acc atc ttc ccc gag att aac aac cgg gga ctg gct atc ggc | 2296 |
| 208 | Ile Glu Thr Ile Phe Pro Glu Ile Asn Asn Arg Gly Leu Ala Ile Gly | |
| 209 | 685 690 695 700 | |
| 211 | cgc gtt gta gcg cgc gaa atc aga cac aac gtg acc ata gac tac gag | 2344 |
| 212 | Arg Val Val Ala Arg Glu Ile Arg His Asn Val Thr Ile Asp Tyr Glu | |
| 213 | 705 710 715 | |
| 215 | gag ttt gag gtc ctc tcc ctc aca gtg agg gtg cgt gac ctt aac acc | 2392 |
| 216 | Glu Phe Glu Val Leu Ser Leu Thr Val Arg Val Arg Asp Leu Asn Thr | |
| 217 | 720 725 730 | |
| 219 | gtc tac gga gac gac tac gac gaa tcg atg ctc aca ata act ata atc | 2440 |
| 220 | Val Tyr Gly Asp Asp Tyr Asp Glu Ser Met Leu Thr Ile Thr Ile Ile | |
| 221 | 735 740 745 | |
| 223 | gat atg aac gac aac gcg ccg gtg tgg gtg gag ggg act ctg gag cag | 2488 |
| 224 | Asp Met Asn Asp Asn Ala Pro Val Trp Val Glu Gly Thr Leu Glu Gln | |
| 225 | 750 755 760 | |
| 227 | aac ttc cga gtc cgc gag atg tcg gcg ggc ggg ctc gtg gtg ggc tcc | 2536 |
| 228 | Asn Phe Arg Val Arg Glu Met Ser Ala Gly Gly Leu Val Val Gly Ser | |
| 229 | 765 770 775 780 | |
| 231 | gtg cgc gcg gac gac atc gac gga ccg ctc tac aac caa gtg cga tac | 2584 |
| 232 | Val Arg Ala Asp Ile Asp Gly Pro Leu Tyr Asn Gln Val Arg Tyr | |
| 233 | 785 790 795 | |
| 235 | acc att ttc cct cgt gaa gac aca gat aag gac ctg ata atg atc gac | 2632 |
| 236 | Thr Ile Phe Pro Arg Glu Asp Thr Asp Lys Asp Leu Ile Met Ile Asp | |
| 237 | 800 805 810 | |
| 239 | ttc ctc acg ggt caa att tcc gtg aac aca agc ggc gcc atc gac gcg | 2680 |
| 240 | Phe Leu Thr Gly Gln Ile Ser Val Asn Thr Ser Gly Ala Ile Asp Ala | |
| 241 | 815 820 825 | |
| 243 | gat act cct cca cgc ttc cac ctc tac tat aca gtg gtc gct agt gac | 2728 |
| 244 | Asp Thr Pro Pro Arg Phe His Leu Tyr Tyr Thr Val Val Ala Ser Asp | |
| 245 | 830 835 840 | |
| 247 | cga tgc tcg aca gaa gat cct gca gat tgc ccc cct gac ccg act tat | 2776 |
| 248 | Arg Cys Ser Thr Glu Asp Pro Ala Asp Cys Pro Pro Asp Pro Thr Tyr | |
| 249 | 845 850 855 860 | |
| 251 | tgg gaa acc gaa gga aat atc aca atc cac atc acc gac acg aac aac | 2824 |
| 252 | Trp Glu Thr Glu Gly Asn Ile Thr Ile His Ile Thr Asp Thr Asn Asn | |
| 253 | 865 870 875 | |
| 255 | aag gtc ccg cag gcg gaa acg act aag ttc gat acc gtc gtg tat att | 2872 |
| 256 | Lys Val Pro Gln Ala Glu Thr Thr Lys Phe Asp Thr Val Val Tyr Ile | |
| 257 | 880 885 890 | |
| 259 | tac gag aac gca acc cac tta gac gag gtg gtc act ctg ata gcc agt | 2920 |
| 260 | Tyr Glu Asn Ala Thr His Leu Asp Glu Val Val Thr Leu Ile Ala Ser | |
| 261 | 895 900 905 | |
| 263 | gat ctt gac aga gac gaa ata tac cac acg gtg agc tac gtc atc aat | 2968 |

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| | | | | | | | | | | | | | | | | | |
|-----|------|------|-----|-----|------|------|------|-----|-----|------|------|------|-----|-----|------|-----|------|
| 264 | Asp | Leu | Asp | Arg | Asp | Glu | Ile | Tyr | His | Thr | Val | Ser | Tyr | Val | Ile | Asn | |
| 265 | | 910 | | | | | 915 | | | | | 920 | | | | | |
| 267 | tat | gca | gtg | aac | cct | cga | ctg | atg | aac | ttc | ttc | tcc | gtg | aac | cga | gag | 3016 |
| 268 | Tyr | Ala | Val | Asn | Pro | Arg | Leu | Met | Asn | Phe | Phe | Ser | Val | Asn | Arg | Glu | |
| 269 | 925 | | | | | 930 | | | | | 935 | | | | | 940 | |
| 271 | acc | ggc | ctg | gtg | tac | gtg | gac | tat | gag | acc | cag | ggt | agt | ggc | gag | gtg | 3064 |
| 272 | Thr | Gly | Leu | Val | Tyr | Val | Asp | Tyr | Glu | Thr | Gln | Gly | Ser | Gly | Glu | Val | |
| 273 | | | | | 945 | | | | | 950 | | | | | 955 | | |
| 275 | ctg | gac | cgt | gat | ggt | gat | gaa | cca | acg | cac | cgt | atc | ttc | ttc | aac | ctc | 3112 |
| 276 | Leu | Asp | Arg | Asp | Gly | Asp | Glu | Pro | Thr | His | Arg | Ile | Phe | Phe | Asn | Leu | |
| 277 | | | | | 960 | | | | | 965 | | | | | 970 | | |
| 279 | atc | gac | aac | ttc | atg | ggg | gaa | gga | gaa | ggt | aac | aga | aat | cag | aac | gac | 3160 |
| 280 | Ile | Asp | Asn | Phe | Met | Gly | Glu | Gly | Glu | Gly | Asn | Arg | Asn | Gln | Asn | Asp | |
| 281 | | | | | 975 | | | | | 980 | | | | | 985 | | |
| 283 | aca | gaa | gtt | ctc | gtt | atc | ttg | ttg | gat | gtg | aat | gac | aat | gct | cct | gaa | 3208 |
| 284 | Thr | Glu | Val | Leu | Val | Ile | Leu | Leu | Asp | Val | Asn | Asp | Asn | Ala | Pro | Glu | |
| 285 | | 990 | | | | | 995 | | | | | 1000 | | | | | |
| 287 | ttg | cca | ccg | ccg | agc | gaa | ctc | tct | tgg | act | ata | tct | gag | aac | ctt | aag | 3256 |
| 288 | Leu | Pro | Pro | Pro | Ser | Glu | Leu | Ser | Trp | Thr | Ile | Ser | Glu | Asn | Leu | Lys | |
| 289 | 1005 | | | | | 1010 | | | | | 1015 | | | | 1020 | | |
| 291 | cag | ggc | gtc | cgt | ctt | gaa | cca | cat | atc | ttc | gcc | ccg | gac | cgc | gac | gag | 3304 |
| 292 | Gln | Gly | Val | Arg | Leu | Glu | Pro | His | Ile | Phe | Ala | Pro | Asp | Arg | Asp | Glu | |
| 293 | | | | | 1025 | | | | | 1030 | | | | | 1035 | | |
| 295 | ccc | gac | aca | gac | aac | tcc | agg | gtc | ggc | tac | gag | atc | ctg | aac | ctc | agc | 3352 |
| 296 | Pro | Asp | Thr | Asp | Asn | Ser | Arg | Val | Gly | Tyr | Glu | Ile | Leu | Asn | Leu | Ser | |
| 297 | | | | | 1040 | | | | | 1045 | | | | | 1050 | | |
| 299 | acg | gag | cgg | gac | atc | gaa | gtg | ccg | gag | ctg | ttt | gtg | atg | ata | cag | atc | 3400 |
| 300 | Thr | Glu | Arg | Asp | Ile | Glu | Val | Pro | Glu | Leu | Phe | Val | Met | Ile | Gln | Ile | |
| 301 | | 1055 | | | | | 1060 | | | | | 1065 | | | | | |
| 303 | gcg | aac | gtc | acg | gga | gag | ctg | gag | acc | gcc | atg | gac | ctc | aag | gga | tat | 3448 |
| 304 | Ala | Asn | Val | Thr | Gly | Glu | Leu | Glu | Thr | Ala | Met | Asp | Leu | Lys | Gly | Tyr | |
| 305 | | 1070 | | | | | 1075 | | | | | 1080 | | | | | |
| 307 | tgg | ggg | acg | tac | gct | ata | cat | ata | cgg | gca | ttc | gac | cac | ggc | att | ccg | 3496 |
| 308 | Trp | Gly | Thr | Tyr | Ala | Ile | His | Ile | Arg | Ala | Phe | Asp | His | Gly | Ile | Pro | |
| 309 | 1085 | | | | | 1090 | | | | | 1095 | | | | 1100 | | |
| 311 | caa | atg | tcc | atg | aac | gag | aca | tat | gag | ctg | atc | atc | cat | ccg | ttc | aac | 3544 |
| 312 | Gln | Met | Ser | Met | Asn | Glu | Thr | Tyr | Glu | Leu | Ile | Ile | His | Pro | Phe | Asn | |
| 313 | | | | | 1105 | | | | | 1110 | | | | | 1115 | | |
| 315 | tac | tac | gcg | cct | gag | ttc | gtc | ttc | ccg | acc | aac | gat | gcc | gtc | ata | cga | 3592 |
| 316 | Tyr | Tyr | Ala | Pro | Glu | Phe | Val | Phe | Pro | Thr | Asn | Asp | Ala | Val | Ile | Arg | |
| 317 | | | | | 1120 | | | | | 1125 | | | | | 1130 | | |
| 319 | ctt | gcg | agg | gaa | cga | gct | gta | atc | aat | gga | gtt | cta | gcg | aca | gtg | aac | 3640 |
| 320 | Leu | Ala | Arg | Glu | Arg | Ala | Val | Ile | Asn | Gly | Val | Leu | Ala | Thr | Val | Asn | |
| 321 | | | | | 1135 | | | | | 1140 | | | | | 1145 | | |
| 323 | gga | gag | ttc | ttg | gag | cgg | ata | tcg | gcg | act | gat | ccg | gac | gga | ctc | cac | 3688 |
| 324 | Gly | Glu | Phe | Leu | Glu | Arg | Ile | Ser | Ala | Thr | Asp | Pro | Asp | Gly | Leu | His | |
| 325 | | 1150 | | | | | 1155 | | | | | 1160 | | | | | |
| 327 | gcg | ggc | gtc | gtc | acc | ttc | caa | gtg | gta | ggc | gat | gag | gaa | tca | caa | cgg | 3736 |
| 328 | Ala | Gly | Val | Val | Thr | Phe | Gln | Val | Val | Gly | Asp | Glu | Glu | Ser | Gln | Arg | |

Use of n and/or Xaa has been detected in the Sequence Listing.
 Review the Sequence Listing to insure a corresponding
 explanation is presented in the <220> to <223> fields of
 each sequence using n or Xaa.



VERIFICATION SUMMARY

PATENT APPLICATION: US/09/457,864

DATE: 08/21/2001

TIME: 15:16:09

Input Set : N:\jumbos\457864.txt

Output Set: N:\CRF3\08212001\I457864.raw

L:717 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:731 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:745 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:759 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:855 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:869 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:883 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:897 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15